REMARKS

Original claims 1, 2, 4-10, and 12-16, and previously amended claims 3 and 11 remain in the application.

The Examiner has rejected claims 1, 2, 5, 6, 9, 10, 13, 14, and 15 under 35 USC § 102(b) as being anticipated by U.S. Patent No. 6,459,829 B1 (Yamauchi et al.) issued on October 1, 2002. The Examiner has indicated that claims 3, 4, 7, 8, 11, 12, and 16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Prior to discussing the Examiner's rejection of claims 1, 2, 5, 6, 9, 10, 13, 14, and 15, applicants are providing a brief discussion of the present invention to aid in illustrating the differences between the present invention and the invention of Yamauchi et al. The present invention is directed to a stabilized laser system that generates an output signal with a desired stabilized wavelength. The system comprises a plurality of n lasers, a feedback stabilization arrangement, and a reflector. Each of the plurality of n lasers, while emitting light and having a preselected portion thereof fed back to output port of each laser, causes the fed back portion to be amplified and shifted in wavelength in a first direction which is spaced apart from the center wavelength of the feedback signal. The feedback stabilization arrangement is coupled to the output ports of the plurality of n lasers for generating **therein a primary feedback signal back to said output ports** having a wavelength

spectrum peaking at a wavelength shifted in an opposite direction to the first direction generated by the lasers in response to the feedback signal so as to provide an output signal at the output of the stabilized laser system having a wavelength spectrum that peaks essentially at the desired wavelength. A reflector is located at a predetermined specific signal round-trip time delay distance from the output of the feedback stabilization arrangement. The reflector receives the output signal from the feedback stabilization arrangement and passes a first portion thereof therethrough as an output signal from the system, and reflects a remaining second portion back to the feedback stabilization arrangement **as a secondary feedback signal to the output ports of the plurality of n laser sources. This secondary feedback signal contributes to each of the plurality of n laser sources being set in a stable "coherence collapse" mode.** The term "coherence collapse" was defined in detail in the present specification at page 9, line 29, to page 10, line 8, and will not be repeated here.

The Examiner, in the rejection of claims 1, 2, 5, 6, 9, 10, 13, 14, and 15 under 35 USC § 102(b), states that FIG. 1A of Yamauchi et al. "shows a plurality of laser sources 21a-23a, each laser source, which, while emitting light and having a preselected portion thereof fed back thereto, causes the fed back portion to be amplified and shifted in wavelength in a first direction which is spaced apart from the center wavelength of the feedback signal, **a feedback stabilization arrangement** comprising a multiplexer/demultiplexer 24 comprising a plurality of first

input/output ports 24a-24c, each first input/output port being coupled for receiving an output signal from a corresponding one of the plurality of laser sources for filtering the received signals using a first spectral response and multiplexing the received signals for generating a filtered and multiplexed output signal at a second input/output port 24d thereof for use as an output signal from the feedback stabilizations arrangement, and **for generating a filtered and demultiplexed feedback signal by the multiplexer/demultiplexer that is wavelength shifted by a predetermined amount and direction for transmission back to an output port 24d of each of the corresponding one of the plurality of n laser sources** for stabilizing each of said plurality of laser sources at the desired output center wavelength, and **a reflector 30 located at a predetermined signal round-trip time delay distance** (col. 7, l 22-23) from the feedback stabilization arrangement for receiving the multiplexed output signal from the feedback stabilization arrangement, for passing a first portion thereof therethrough, and for reflecting a remaining second portion back to the feedback stabilization arrangement as a secondary feedback signal **that contributes to each of the plurality of n laser sources being set in a stabile coherence collapse mode** (see col. 8, l 12-67, and col. 9, l 1-31)" (bold letters provided for emphasis). Applicants traverse the Examiner's rejection of claims 1, 2, 5, 6, 9, 10, 13, 14, and 15 under 35 USC § 102(b) for the following reasons.

The device in FIG. 1A of Yamauchi et al. (and similarly, for example, in FIG. 9) comprises a plurality of laser sources 21a-

23a, an optical multiplexing/demultiplexing element 24, and a reflecting element 30. In operation, each of the laser sources generates a different wavelength light beam (and/or differently polarized as shown in FIG. 9) that is transmitted to separate inputs of the **optical multiplexing/demultiplexing element 24**, The element 24 is shown as an Arrayed Waveguide Grating (AWG) that primarily functions to multiplex the plurality of wavelengths generated by the plurality of laser sources 21a-23a into a single wideband multiplexed output signal at output port 24d. Yamauchi et al. does not disclose, or even suggest, that the element 24 (which the Examiner indicates is a feedback stabilization arrangement equivalent to present element 22 in present FIG. 3) is, by itself, capable of "**generating** a feedback signal having a wavelength spectrum peaking at a wavelength shifted in an opposite direction to the first direction generated by plurality of n lasers in response to the feedback signal so as to provide an output signal at the output of the stabilized laser system having a wavelength spectrum that peaks essentially at a desired wavelength" as is recited in original claim 1 and similarly in independent original claims 3, 9, and 13. The optical **multiplexing/demultiplexing** element 24 is mainly capable of multiplexing the output wavelength signals from the plurality of laser sources 21a-23a for generating a multiplexed output signal at output port 24d thereof, and demultiplexing a multiplexed signal received at the port 24d for transmission back to the plurality of laser sources. Therefore, element 24 of

Yamauchi et al. is not capable of generating a feedback signal as is recited in present independent claims 1, 5, 9, and 13.

Still further, Yamauchi et al. does not disclose or even suggest that its device includes "a reflector located **at a predetermined signal roundtrip time delay distance from the feedback stabilization arrangement** for receiving the output signal therefrom, for passing a first portion thereof therethrough, and for reflecting a remaining second portion thereof back to the feedback stabilization arrangement **as a** **secondary feedback signal that contributes to each of the plurality of n laser sources being set in a stable coherence collapse mode**" as is recited in present independent claim 1, and similarly in present independent claims 5, 9, and 13. More particularly, as is stated at column 7, lines 16-23, of Yamauchi et al., the reflecting element 30 is provided **near** the output side of the output terminal 24d of the optical multiplexing element 24, that the distance therebetween **is not particularly restricted**, and could preferably be about 3m or less. Since the reflecting element 30 is not located at a predetermined specific distance from the output of the multiplexer 24, it is believed that the reflected signal from the reflecting element 30 does not contribute to each of the plurality of n laser sources being set in **a stable coherence collapse mode** since Yamauchi et al. does not disclose, or even suggest, that any **secondary feedback signal** would contribute to the laser sources being set in a stable coherence collapse mode. The feedback signal of Yamauchi et al. only provides a single feedback signal for stabilizing each laser

to provide a substantially maximum output power signal. Still further, the reflector element 30 does not provide a feedback signal to the multiplexing element 24 that is **a secondary feedback signal** to the plurality of laser sources since the multiplexing element 24 does not by itself provide **a primary feedback signal** so that the reflected signal from the reflecting element 30 becomes a **secondary** feedback signal. In light of the above discussion, applicants believe that present original independent claims 1, 5, 9, and 13 are not anticipated, in the sense of 35 USC § 102(b), or even made obvious, in the sense of 35 USC § 103, by Yamauchi et al. and are, therefore, in a condition for allowance.

The Examiner states that with respect to dependent claims 2, 6, and 10, "column 7, lines 22-24, discloses a delay line located external to the feedback stabilization 24 arrangement and before the reflector 30 for providing a predetermined delay to a signal passing therethrough". Column 7, lines 22-24, of Yamauchi et al. does not disclose, or even suggest, that the optical fiber 3 between the output port 24d and the reflector element 30 provides "a predetermined delay to a signal passing therethrough in either direction **such that the secondary feedback signal received at each of the plurality of n laser sources sets the laser source in the stabile coherence collapse mode**" as is recited in original dependent claims 2, 6, and 10. Since it was shown hereinabove that applicants believe that original independent 1, 5, and 9 are allowable over Yamauchi et al., then claims 2, 6, and 10, which

are dependent of independent claims 1, 5, and 9, respectively, are also believed to be allowable.

The Examiner has indicated that claims 3, 4, 7, 8, 11, 12, and 16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Applicants have shown hereinabove that it is believed that original independent claims 1, 5, 9, and 13 are not anticipated, in the sense of 35 USC § 102(b), or even made obvious, in the sense of 35 USC § 103, by Yamauchi et al. and are, therefore, allowable. Dependent claims 3, 4, 7, 8, 11, 12, and 16, which are dependent on one of independent claims 1, 5, 9, and 13, further define and/or limit an independent claim. Accordingly, dependent claims 3, 4, 7, 8, 11, 12, and 16 define over Yamauchi et al. for the same reasons provided hereinabove.

Original claims 1, 2, 4-10, 12-16, and previously amended claims 3 and 11 remain in the application and are beleived to be in condition for allowance.

In conclusion, applicants have shown that original claims 1, 2, 4-10, and 12-16, and previously amended claims 3 and 11, are not anticipated, in the sense of 35 U.S.C. § 102, or made obvious, in the sense of 35 U.S.C. § 103, by Yamauchi et al. The application is now believed to be in condition for allowance, and an early and favorable action to this effect is respectfully requested. If for some reason the Examiner does not believe that the application is now in condition for allowance, and that a further interview or telephone conversation would further the

prosecution, the Examiner is requested to contact Applicants' attorney at Area Code (908) 464-0248.

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